Missouri River flowing at UNL

By Angie Brunkow
Senior Reporter

A trip to the Missouri River is as quick as a walk to the Walter Scott Engineering Center at UNL.

At least that's the case for engineering students studying the flow of sediment through the Fort Calhoun Nuclear Power Plant's river intake.

The pumping intake station collects water to cool nuclear generators at the plant. When sediment enters the plant, it damages the pumps and causes costly maintenance problems, said Rollin Hotchkiss, professor of civil engineering and project leader.

The scale model replicates the flow of the river and the pump station at a 1-30.5 scale. The shape of the riverbed is similar, he said, and the sand in the riverbed is replicated with ground-up walnut shells.

"If you were to go to the Missouri River this afternoon and the water was clear," he said, "this is what it would look like."

Using the model, which took about three months to build and calibrate, Hotchkiss and graduate student Mike Drain are testing ways to keep sediment in the river and out of the pumps.

The two researchers installed vanes, or short vertical walls, in front of the plant's intake pumps, Drain said.

"The vanes lower the riverbed in the vicinity of the pumping station," he said. Vanes obstruct the flow of the water, causing it to flow faster and carry the sediment away from the station, he said.

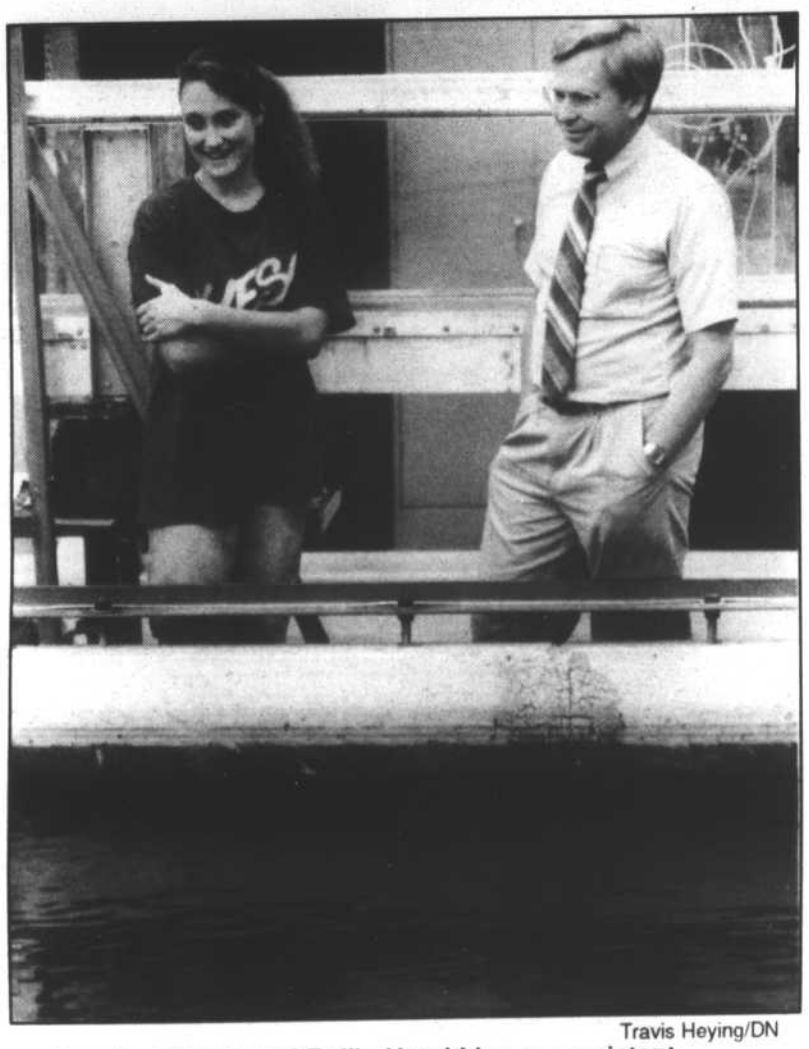
"It has to go faster to get to the same place in the same time," Drain, who manages the project, said.

So far, Hotchkiss said, progress in the project is "excellent."

The riverbed in front of the station was visibly lower, and tests of water entering the pumps show it to be carrying less sediment, Drain said.

Further tests on the project will change only the angle or positioning of the vanes, Drain said.

"The concept will remain the same," he said.



Travis Heying/DN

Jennifer Ziegler and Rollin Hotchkiss, an assistant professor of civil engineering, watch over the river model Tuesday.

Making the 70-foot-long model like the actual river was one of the most difficult parts of the project, Drain said.

"A lot of the most challenging parts are not the engineering parts," he said.

The use of walnut shells solved problems in simulating the water bed but caused others, Drain said.

"When you put them in water, they have a natural dye," he said. "It turns the water black."

Drain said it also was touchy getting the water velocity, dune heights and other factors to match up. They all influence one another, he said.

But the problems of this project soon will be finished as the researchers submit the final report to Applied Power Associates, who are contracted to fix the sediment problem by the Omaha Public Power District, Hotchkiss said.

"On July 1, we'll build a different model," he said.

Ag college will offer minor for leadership

Students of all majors eligible

By Kara Korshoj
Staff Reporter

UNL students who have been searching for a minor in leadership soon will have one available.

The College of Agricultural Sciences and Natural Resources has created a minor in leadership and communication. The minor will be available to all students, regardless of major.

Leverne Barrett, professor of agricultural leadership, education and communication, said the minor was created out of a need for students to learn leadership skills.

"(This minor) teaches students how to lead people who are different from one's own self and basic motivation," Barrett said.

Barrett said he thought leadership was an essential skill in agriculture and any other major.

"Students really need to learn more about leading ... (students) will find themselves in supervisory positions without the skills to do it," Barrett said.

The minor originated in the agriculture college because there was a long history of interest in leadership in agriculture, Barrett said.

Many students who graduated from the agriculture college have continued to write for agricultural publications and develop advertisements for agricultural advertising companies, Barrett said.

Students in these areas needed leadership courses available to them, Barrett said.

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>
> *— Barrett professor of agricultural leadership*

The minor in leadership and communication has 12-hour and 18-hour plans.

Courses for the 18-hour plan include six hours from the following courses:

- Technical Communication I
- Dynamics of Effective Leadership in Organizations
- Dynamics of Agricultural Journalism

Other courses:

- Ethics of Agriculture and Natural Resources
- Interpersonal Skills
- Leadership Development
- Technical Communication II
- Presentation Strategies
- Seminar Leadership

Three hours are required from the following courses for the 12-hour plan:

- Dynamics of Agricultural Journalism
- Ethics of Agriculture and Natural Resources